

IN THE SPECIFICATION

Please amend the Title on page 1 as follows:

IMAGING APPARATUS INCLUDING CONTROL DEVICE FOR  
CONTROLLING WHITE BALANCE

Please replace the paragraph at page 1, lines 9-15, with the following rewritten paragraph:

A digital camera as an image input device has been used widely spread together with a development of a personal computer in recent years. Especially, the digital camera is used by means of a photographer who has no special techniques, in many cases. Many digital cameras are adapted to set automatically a shutter speed, an exposure, and a focusing corresponding to an object in order to eliminate a failure of a in photographing.

Please replace the paragraph at page 3, lines 17-24, with the following rewritten paragraph:

When the electronic zoom is operated, a proportion in which a screen is occupied by a main image tends to be larger. In a system conducting the white balance by detecting the feature of the color within the screen, if the screen ~~is included by~~ includes a large amount of the same color, there are some cases that whether the color is a color of a light source illuminating the object or not, or whether the color is the color of the object or not can not be judged. In this case, a miss-operation such as white becoming the object color ~~a white is occurred~~ will occur.

Please replace the paragraph beginning at page 3, line 25 to page 4, line 2, with the following rewritten paragraph:

According to the present invention, when the electronic zoom is performed, much color information within the screen is extracted by extracting the color information from a broader area than a displayed area, and as a result, it is possible to lower ~~[[a]]~~ the possibility of an occurrence of the miss-operation.

Please replace the paragraph at page 4, lines 3-7, with the following rewritten paragraph:

In a second aspect of the present invention according to the first aspect, the white balance control device is adapted to be capable of selecting ~~as to~~ whether the feature detection area selected by the feature detection area selection device and the zoom area selected by the zoom area selection device are an identical area or not.

Please replace the paragraph at page 4, lines 15-19, with the following rewritten paragraph:

According to the present invention, it is possible to select that whether the feature detection area is matched with the displayed area or not. The object, which ~~gives an influence~~ influences ~~[[on]]~~ the white balance, is specified by the display screen, and the action such as the changing ~~flaming~~ framing can be taken.

Please replace the paragraph at page 5, lines 5-8, with the following rewritten paragraph:

In a mode~~[[,]]~~ which uses only the result of the feature detection of the range selected by the digital camera for the white balance control, the white balance control is conducted

without the data from the feature extraction area, which are not included in the digital zoom area.

Please replace the paragraph at page 5, lines 9-11, with the following rewritten paragraph:

According to the present invention, the third aspect of present invention conducts the same ~~function~~ functional effect as the first and the second aspect of the present invention.

Please replace the paragraph at page 5, lines 12-23, with the following rewritten paragraph:

In a ~~forth~~ fourth aspect of the present invention according to the second aspect, the feature detection device divides the feature detection area into the several areas and conducts the feature detection in the each divided area respectively. The imaging apparatus further comprises a weighting setup device to set an influence degree for the white balance control to data in the each area within the feature detection area. When a mode[[,]] which does not match the zoom area and the feature detection area, is selected, the white balance control device conducts the weighting to the result of the feature detection in the each area in accordance with the weighting set by the weighting setup device and conducts the white balance control with the weighted result of the feature detection.

Please replace the paragraph beginning at page 5, line 24 to page 6, line 2, with the following rewritten paragraph:

When a mode in which the white balance control is conducted by using the outside range of the digital zoom ~~flaming~~ framing is selected, the degree of influence ~~degree to~~ on the white balance control is changed in accordance with the result of the feature extraction from

each area such as the area within the ~~flaming~~ framing range, the area one part is included in the ~~flaming~~ framing range, and the area outside the ~~flaming~~ framing.

Please replace the paragraph at page 6, lines 3-6, with the following rewritten paragraph:

According to the present invention, a stable white balance control can be accomplished by carrying out the weighting such that the data within the ~~flamed~~ framed range is used selectively and the data from outside of the ~~flamed~~ framed range is also used effectively.

Please replace the paragraph at page 6, lines 7-20, with the following rewritten paragraph:

In a fifth aspect of present invention according to the first aspect, the feature detection device divides the feature detection area into several areas and conducts the feature detection device in each area. The imaging apparatus further comprises the weighting setup device to set the influence degree to the white balance control for the data in the each area within the feature detection area. When a macro-mode or a portrait mode is selected as a photographing mode, the weighing setup device sets equally the weighting for the result of the feature detection in the area, which is not included in the zoom area, and the weighting for the result of the feature detection within the zoom area. The white balance control device conducts the weighting ~~[[to]]~~ as the result of the feature detection in the each area in accordance with the weighting set by the weighting setup device, and conducts the white balance control with the weighted result of the feature detection.

Please replace the paragraph at page 6, lines 21-23, with the following rewritten paragraph:

In the portrait mode, ~~[[a]]~~ the probability of the existence of a person within the screen is high. In this case, it is effective to use the area which is not included in the zoom area.

Please replace the paragraph beginning at page 7, line 14 to page 8, line 1, with the following rewritten paragraph:

In a seventh aspect of the present invention according to the first aspect, the feature detection device divides the feature detection area into the several areas and conducts the feature detection in the each divided area respectively. The present invention further comprises ~~[[the]]~~ a weighting setup device to set the influence degree for the white balance control to the data in the each area within the feature detection area. if a light source of a high brightness is included in the result of the feature detection in the area, which is not included in the zoom area, the weighting setup device sets the weighting for the result of the feature detection in the area, which is not included in the zoom area, lower than the result of the feature detection within the zoom area. The white balance control device conducts the weighting ~~[[to]]~~ as the result of the feature detection in the each area in accordance with the weighting set by the weighting setup device and conducts the white balance control with the weighted result of the feature detection.

Please replace the paragraph at page 8, lines 2-8, with the following rewritten paragraph:

When a very high brightness part is included in one part of the screen by a photometry result, there is a possibility that the light source is included in the part. When the light source

is included in [[a]] the background of the object, there is a possibility that the light source and the light source irradiating [[to]] the object have a different coloration. In this case, it is better not to use the data of the high brightness area in order to achieve the accurate white balance.

Please replace the paragraph beginning at page 9, line 24 to page 10, line 4, with the following rewritten paragraph:

In an eleventh aspect of the present invention according to the second aspect, the present invention comprises the live view function for confirming the ~~flaming~~ framing of the electronic zoom until the time of photographing. The operation result of the feature detection area selection device and the result of the white balance processing depending on the specific photographing condition can be confirmed by the live view screen with the condition displaying the live view screen by the display device.

Please replace the paragraph at page 10, lines 7-14, with the following rewritten paragraph:

In a twelfth aspect of the present invention according to the third aspect, the present invention comprises the live view function for confirming the ~~flaming~~ framing of the electronic zoom until the time of photographing. The operation result of the feature detection area selection device and the result of the white balance processing depending on the specific photographing condition can be confirmed by the live view screen with the condition displaying the live view screen by the display device.

Please replace the paragraph beginning at page 12, line 25 to page 13, line 7, with the following rewritten paragraph:

The operator looks at the object thorough a finder (not shown). When the operator presses the release button of the operation part for the digital camera, the CPU 14 ~~defects~~ detects the signal, and the lenses 1 and the diaphragm 2 are actuated by the motor driver 11, and then the image of the object is focused on the CCD 3. These operations are conducted automatically by the CPU 14 in accordance with information by a sensor (not shown). The image focused on the CCD 3 is taken out sequentially by a clock generated from the timing generator 13, and then ~~[[a]]~~ the noise included in data by the CDS 4 is reduced. The noise included in the output signal of CCD 3 is mainly dominated by a reset noise.

Please replace the paragraph at page 15, lines 6-11, with the following rewritten paragraph:

Subsequently, ~~[[a]]~~ the basic operation of an AWB control will be explained. The object is projected into the CCD 3 through the lenses 1. The CCD 3 converts the object into the electronic signal (analogue image data), and the analogue image data of R, G, and B are outputted. This analogue image data are converted into the digital image signal of R, G, and B by the A/D convert 5.

Please replace the paragraph beginning at page 15, line 27 to page 16, line 13, with the following rewritten paragraph:

Fig.2 is a view explaining an electronic zoom operation for the first embodiment of the present invention. The left view of Fig.2 shows ~~[[a]]~~ the whole range of an imaging pick up device and a range of an electronic zoom. The right view shows display at the time of operating the electronic zoom. When the electronic zoom is set up by the operation part of

the camera 17, the CCD-I/F 12 is outputted into the frame memory 6 as the imaging range only in a set-up electronic zoom range 20. The data temporary stored in the frame memory 6 are processed as above mentioned, and displayed on the display part 8. The electronic zoom is explained by limiting the range that the data of the CCD-I/F 12 are loaded into the frame memory 6. However, the electronic zoom can be accomplished by displaying partly expanded the data when converting into the YUV or reading the data for the display after normally conducted loading the data into the frame memory 6.

Please replace the paragraph beginning at page 16, line 24 to page 17, line 7, with the following rewritten paragraph:

Fig.3 is a view describing a whole range of the imaging pick up device and a range of the electronic zoom for the second embodiment of the present invention. Reference numeral 25 denotes an object within an electronic zoom range 24. It is capable of selecting whether the electronic zoom range 24 is matched with the range of the feature extraction for the screen of the AWB or not by the present invention. It is better not to narrow the range of the feature extraction for the screen because a possibility of a miss-operation is lowered. However, if an area outside of a framed range is occupied by a specific color, an unsuccessful result might be received by the extraction of the feature from the whole screen.

Please replace the paragraph at page 17, lines 8-19, with the following rewritten paragraph:

As shown in Fig.3, if a red light source 26, and so on ~~are appeared~~ appear in the outside [[of]] the framed range 23, the AWB is affected by the red light source, and the screen is shifted to blue, which is a cause of the miss-operation. Moreover, for example, when photographing a cloud in a blue sky, the white color of the cloud can be controlled as being a



white by the zooming up the cloud, and extracting the feature from the zoomed up range. However, if the data from the blue sky an outside of the cloud are used, the AWB is controlled to a direction such as becoming the blue sky the white, and the miss-operation such as becoming the cloud a yellow is happened. In this case, it is possible to change that the AWB is conducted by carrying out the feature extraction from the framed screen 23 by the electronic zoom.

Please replace the paragraph at page 18, lines 7-22, with the following rewritten paragraph:

Fig.5 is a view explaining the electronic zoom operation for the fourth embodiment of the present invention. Reference numeral 46 denotes an object in an electronic zoom range 45. Reference numeral 44 is an output range of the CCD. Reference numeral 43 is a feature extraction range within 44. Reference numeral 45 within a solid line is an electronic zoom range. When the mode conducting the AWB control is selected by using the outside range of the digital zoom framing, ~~[[a]]~~ the degree of influence degree to on the AWB is changed in accordance with the result of the feature extraction from each blocks such as 40 within the ~~flaming framing~~ flaming framing range, a block 41 in which one part is included in the ~~flaming framing~~ flaming framing range, and a block 42 an outside of a ~~flaming framing~~ flaming framing range. A weighting is carried out, such as one times for the block data within the ~~flaming framing~~ flaming framing range, 0.6 times for the block data in which one part is within the ~~flaming framing~~ flaming framing range, and 0.3 times for the block data the outside of the ~~flaming framing~~ flaming framing range. The stable AWB control is achieved by using the ~~flamed framed~~ flamed framed range 40 selectively, and also using data of the outside ~~flamed framed~~ flamed framed range 42 effectively.

Please replace the paragraph beginning at page 18, line 23 to page 19, line 6, with the following rewritten paragraph:

As the other embodiment, the degree of influence ~~degree for~~ on the data of the outside of the ~~flaming~~ framing range 42 can be changed in accordance with the photographing condition. For example, in a camera which can select the photographing mode such as a macro mode, and a portrait mode, when the portrait mode is selected, the possibility that a person 46 is within the screen becomes higher, and if the electronic zoom is used, the possibility of increasing the degree in which the flamed range is occupied by the person goes up. Therefore, when the portrait mode is selected, the possibility of conducting the stable AWB control becomes higher by the weighting equally the feature data extracted from the block 42, the outside of the flaming range and the data within the flaming range.

Please replace the paragraph at page 19, lines 7-12, with the following rewritten paragraph:

When the macro mode is selected, [[a]] close-up photographing is highly used. In this case, the possibility that a specified color of the object is occupied within the screen goes up. In this case, the possibility of conducting [[the]] a stable AWB becomes higher by weighting equally the data the outside of the flaming range 42 and the data within the flaming range 40.

Please replace the paragraph at page 19, lines 13-27, with the following rewritten paragraph:

Fig.6 is a view describing the electronic zoom operation for a fifth embodiment of the present invention. For example, a photometry result of AE, and so on can be used as the photographing condition. When a very high brightness part 50 is found in one part of the screen as Fig.6 (for example, one part outside of electronic zoom range 52) by the

photometry result of AE, the part has a possibility of including the light source. If the light source ~~is appeared~~ appears, this light source is directed to the camera, so that there is a possibility that the light source illuminating an object 51 has a different coloration from the light source appeared on the screen. In this case, it is better not to use the block data of an area 50 measured as the high brightness part, so that the accurate AWB can be achieved. Consequently, the stable AWB can be operated by changing the weighting such as lowering the weighting, and so on especially for an area having the different condition from other areas.

Please replace the paragraph at page 20, lines 1-5, with the following rewritten paragraph:

The use of the outside of the ~~flaming~~ framing range can be selected, and the result of changing the weighting can be confirmed by the display part. Therefore, a photography failure can be reduced by confirming the result with a live view condition before photographing and changing the area.

Please replace the paragraph at page 20, lines 19-22, with the following rewritten paragraph:

According to the fourth aspect of the present invention, the flamed range is used selectively by the weighting as described above and, it is possible to carry out the stable AWB by using the data the outside of the ~~flaming~~ framing effectively.